

MOTORCYCLE PPE: IT AIN'T JUST FOR LOOKS p. 26

KNOWLEDGE

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Mission Statement:

The Army Safety Team provides the Army with safety and risk management expertise to preserve readiness through the prevention of accidental loss of our Soldiers, Civilians, Families and vital resources.

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CROSSWALKS O

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Editor's note: So far this fiscal year, the Army has lost eight Soldiers to pedestrian mishaps, compared to just one fatality for the same time frame last year. As the weather begins to warm up, more Soldiers will be heading outdoors for recreational activities. Leaders must remind Soldiers to continue practicing risk management in everything they do both on and off duty to help curb these preventable losses.

How many times were you about to step into a crosswalk but noticed the driver in an approaching vehicle seemed oblivious to you? How often did you hesitate and wait, choosing to not let their being oblivious send you into oblivion?

R CROSSHAIRS?

I'd just driven on post and stopped at the 24-hour shopette to get a cup of coffee. It was a chilly morning and I needed that cup of joe. I drove to the parking lot where I worked, got out and headed toward Seventh Avenue to my office. It was still a bit dark outside and I made it a point to look left and right before stepping out into the road. I saw cars stopped at a red light about 300 feet to my left. When I looked to the right, I saw the road was clear. Glancing again to the left for a couple of seconds, I felt it was safe to step into the crosswalk. I wasn't distracted or in a rush as I started across the street.

I was about halfway across when a blue Ford Mustang that had been stopped at the red light flew through the crosswalk, nearly clipping me from behind. That really

startled me. I yelled, "Watch where you're going!" But he just drove off as if nothing had happened.

When I got to the other side and stepped onto the sidewalk, I just stood there for a moment. I thought how fortunate I'd been that I hadn't stopped in the crosswalk to answer my phone, turn around to get something I'd left in my car or dropped my keys and bent down to pick them up. Had I done any of those things, I might have been seriously injured.

I feel lucky I wasn't hit that day. Maybe the driver had something on his mind other than the road or was running late for work. Maybe he'd been messing with his radio, sipping coffee, munching on some food or talking on a cellphone. Maybe he just felt like he owned the road.

Whatever the reason he sped through a well-lit crosswalk, his actions were irresponsible and wrong.

Because pedestrians have the right of way in crosswalks, sometimes we may tend to feel safe, believing drivers will respect the law. However, when they don't, we're the losers. It's a simple matter of size, weight and momentum. Car bodies pack a bigger punch than human bodies.

I thought I was safe stepping into the crosswalk that morning. I know better now and realize it's not enough to just look left and right and left again. When you're in a crosswalk, you need to constantly monitor what is happening around you. The bottom line is situational awareness is vital for safety. ■

TAKE A WALK ON THE SAFE SIDE

Safety is important for all roadway users — pedestrians and drivers alike. Both are expected to follow the safe rules of the road to help prevent crippling or deadly accidents.

Each year, about 4,600 pedestrians are killed and another 70,000 are injured in traffic accidents. Following the tips below will help you to walk on the safe side.

1. Be alert and attentive to traffic and don't cross the street until it is safe.
2. Be responsible and obey pedestrian Walk/Don't Walk signals. One-third of all fatal collisions are a result of a pedestrian disregarding traffic signals or making a dangerous judgment.
3. Look left-right-left. If the road is clear, begin crossing. If you're in a country where motorists drive on the left side of the road, then reverse the process and look right-left-right.
4. When crossing the street, continue to check for traffic in all directions, especially for vehicles making a right turn on red.
5. At a crosswalk, if there is traffic, make eye contact with drivers so they can see you, understand your intentions and stop before you start to cross.
6. Use sidewalks when they are available. On roads without sidewalks, it is safest to walk on the left side of the road, facing traffic.
7. Never attempt to walk along or cross expressways, interstate highways or turnpikes. If your vehicle breaks down, remain inside and use your cellphone to call for help.
8. When walking at night or during the low-light hours of dawn or dusk, wear something reflective on your clothing and shoes or carry a flashlight. Almost 50 percent


PEDESTRIAN AND BICYCLE SAFETY
Federal Highway Administration
Washington, D.C.

of all pedestrian fatalities occur between 6 p.m. and midnight — a six-hour window. Wearing reflective clothing is especially important during the fall and winter months, when daylight hours are shorter and people often wear dark coats or other clothing which may be difficult for motorists to see.

9. Limit consumption of alcohol if you plan on walking. About 38 percent of all pedestrians (age 16 and older) killed have a blood alcohol content of .08 or greater.

10. Supervise road crossings for children under the age of 10 since they don't have the capacity to safely judge the situation. Pedestrian fatalities involving children between the ages of 5 and 9 make up one-fourth of all roadway fatalities for this age group.

Drivers also need to be extra vigilant, so stay alert. Make sure your lights are on and refrain from taking your eyes off the roadway. Be sure to look for pedestrians in areas where they are likely to appear, such as an intersection, but remember walkers can be on any road. It could save a life — or change yours forever.



The welcome relief from the bitter cold and snow of winter brings with it another significant hazard — the spring and summer severe weather conditions. It is crucial all Soldiers are familiar with the inherent dangers of severe weather.

RESPECT the

COMPILED BY THE KNOWLEDGE STAFF

Often called nature's heat engine, thunderstorms are born from cumulus clouds that grow into towering cumulus and, ultimately, reach adulthood as cumulonimbus. While thunderstorms can occur any time of year, they most often occur in the late afternoon to early evening on hot summer days. They can form by themselves (single cell, super cell or air mass) or in clusters (frontal, squall lines or mesoscale convective complexes). A thunderstorm develops in three stages — the cumulus or developing stage, the mature stage and the dissipating stage — and can harness energy equal to, and often greater than, the energy released by an atomic bomb.

Microbursts

Microbursts are well-documented hazards known for bringing down aircraft. They are small-scale, intense downdrafts that, upon reaching the surface, spread outward in all directions. The greatest threat from these downdrafts often occurs along the front or leading edge of

a thunderstorm. Because of their small size (less than one to two and a half miles) and their short lifespan (usually less than 15 minutes), downdrafts most often occur over areas without surface precipitation.

Microbursts are not easily detectable using conventional weather radar or wind shear alert systems. The intensity of the downdraft can reach 100 feet per second. Horizontal winds near the surface can be as strong as 45 knots, resulting in a 90-knot shear (headwind to tailwind change for a traversing aircraft) across the microburst. A major consideration for pilots is that a microburst will intensify for about five minutes after it strikes the ground.

Hail

Hail is regarded as one of the most serious aviation hazards associated with thunderstorms. It is usually found between 10,000 and 15,000 feet above ground level, with the greatest frequency of hail occurring during the mature stage of a thunderstorm. Hail can also be found as far as five miles outside

and ahead of an advancing thunderstorm and can produce serious structural damage to an aircraft in just a few seconds.

Lightning

In the United States, there are an estimated 25 million lightning flashes each year. During the past 30 years, lightning killed an average of 62 people per year. Lightning can strike not only people on the ground; it can also strike the skin of an aircraft and its electronic components. Lightning generally occurs within 5,000 feet of the freezing level, in light precipitation or light to negligible turbulence. Lightning "crawlers" can travel more than 35 miles along the clouds and have been observed out to 75 miles on radar.

Tornadoes

Tornadoes are nature's most violent storms. Although tornadoes happen year round, the two peak seasons in the United States are spring (March through May) and fall (November). Spawned from powerful thunderstorms, tornadoes can cause fatalities and devastate a



WEATHER

neighborhood in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with whirling winds that can reach 300 mph. Damage paths can be in excess of one mile wide and 50 miles long. Most tornadoes travel from southwest to northeast and occur during the late afternoon through early evening. When tornado watches or warnings are issued for the area, take immediate safeguards.

Turbulence

Turbulence is the greatest meteorological danger to aviation. It is caused by the tremendous updraft and downdraft winds within the thunderstorm. The most severe turbulence is located between 8,000 and 15,000 feet AGL within the updraft. Updraft winds can be greater than 65 feet per second. Downdraft winds also can produce turbulence, but they are usually less severe and occur below 10,000 feet

AGL. Downdrafts have been known to slam a plane into the ground while landing.

Icing

Icing is another significant hazard associated with thunderstorms. Although it can occur during all three stages of a thunderstorm, icing generally occurs in the mature and dissipating stages when temperatures are between zero and minus 15 C. Supercooled water that exists at subfreezing temperatures will freeze on contact with an aircraft. Clear icing can quickly become extremely hazardous.

Flooding and Flash Flooding

According to the National Oceanic and Atmospheric Administration, flooding is the No. 1 weather-related cause of death with about 140 deaths in the United States each year. Nearly half of all flash-flood fatalities are auto-related. Understanding the dangers of flooding and flash flooding and knowing the immediate actions to take can save lives.

“THE FIRST STEP IN PREPAREDNESS IS ESTABLISHING A SEVERE WEATHER ACTION PLAN FOR HOME, WORK, SCHOOL AND OUTDOORS.”



- Seek higher ground immediately.
- Avoid small rivers and streams; dry riverbeds and low spots can also fill rapidly.
- Do not walk through flowing water more than ankle deep.
- Do not allow children to play around streams, drainage ditches or viaducts, storm drains or other flooded areas.
- If in a vehicle, do not drive through flooded areas.
 - *The large majority of deaths due to flash flooding are due to people attempting to drive through flooded areas.*
 - *Two feet of water can easily carry most vehicles away.*
 - *Roadways concealed by flood waters may not be intact.*
 - *Most flash-flood fatalities occur at night, and most victims become trapped in their automobiles.*

Hurricanes

Among the many significant summertime phenomena are hurricanes. The Atlantic hurricane season runs from June 1 through Nov. 30. The storms develop as a tropical wave and mature into hurricanes over a period of days. Warm surface waters

and a lack of shear in the upper levels of the atmosphere aid in the development of hurricanes.

The storm surge is the most dangerous part of a hurricane. Storm surge is a great dome of water often 50 miles wide or greater that sweeps across the coastline ahead and east of the eye of the hurricane. Hurricanes will also spawn tornadoes, most often found in the right-front quadrant (ahead and to the east of the eye) of the storm, roughly 50 to 300 miles from the center.

In the combat zone

Much of the same weather found in the United States can also be found in theater. Convection and rainfall tend to fall off during the summer months, thus making it much drier in these regions. Additional features that affect the Middle East are the Shamal, found over Iraq and the Arabian Peninsula, and the Seistan — or “Wind of 120 Days” — over Eastern Iran and the “Stans” region. These are areas of significant winds and blowing dust and/or sand. These strong, northwesterly wind events sweep across the region beginning in

May and lasting throughout the summer months. They develop when strong cold fronts pass over the mountains of Turkey and Kurdistan and the leading edge of a mass of relatively cooler air kicks up dust and sand, sending it aloft.

The duration of Shamals or Seistans is normally three to five days. Since the resultant dust and sandstorm is several thousand feet deep, travel by air and ground comes to a standstill. Sustained winds during these events are normally 20 to 35 knots with higher gusts likely. Visibilities will be reduced to zero or near zero for much of the event. Temperatures at lower elevations still hover above 105 F (42 C) during these events.

Heat

Another feature in the summer that affects aircrews and aircraft is the heat. Of all the natural hazards in the United States, heat is the number one non-severe weather-related killer. Excessive temperatures can lead to many heat injuries such as heat cramps, heat exhaustion and heatstroke, which are listed in order of increasing severity. It



is imperative that you recognize the symptoms of heat injury.

Heavy sweating and painful muscle spasms in the legs and stomach are signs of heat cramps. To alleviate these painful spasms, apply firm pressure on cramping muscles and massage to relieve spasms. Also take sips of water.

With heat exhaustion, you might experience heavy sweating; weakness; cold, pale and clammy skin; and a thready pulse, along with fainting and vomiting. To lessen the effects, get out of the sun and into an air-conditioned or fanned room. Lie down and loosen clothing; apply cool, wet cloths; and take sips of water.

Heat or sunstroke is the most critical of all heat injuries. Seek emergency help immediately. Signs of heat stroke include high body temperature (106 F or higher); hot, dry skin; rapid or strong pulse; and, possibly, unconsciousness. Move victims to a cooler environment, remove their clothing and give them a cold bath or use cold sponges or towels. Do not give fluids.

Preventive measures will

help Soldier avoid a heat-related incident. Drink plenty of water to stay hydrated. Alcohol and caffeine will only serve to dehydrate the body. Dress in lightweight, light-colored clothing. If at all feasible, avoid sun exposure during the hottest time of the day (10 a.m. to 2 p.m.) and stay indoors as much as possible. Always stay alert to possible heat injuries.

Density altitude

Density altitude is defined as the pressure altitude corrected for temperature deviations from the standard atmosphere. Changes in air density are caused by variations in atmospheric pressure, temperature and humidity. The lift of an aircraft wing or blade is affected by the speed of the air around it and the density of the air through which it moves. Lift will be increased by cold, dense air. An increase in both temperature and humidity causes a reduction in air density. Thus, in hot and humid conditions, the DA at a particular location might be significantly higher than the geometric altitude.

Too often, pilots associate DA only with high-elevation airports. Certainly, the effects of DA on aircraft performance are increasingly dramatic in operations from such airports, especially when the temperature is also hot. However, it is important to remember that DA also has a negative effect on performance at low-elevation airports when the temperature goes above the standard air value of 15 C at sea level. Remember also that the standard air temperature value decreases with altitude.

Conclusion

There are many spring and summer hazards. Taking preventive measures and being fully aware of operational weather is vital to mitigating many of these hazards. The first step in preparedness is establishing a severe weather action plan for home, work, school and outdoors. Always respect the weather. ■

Editor's note: *This article was reviewed and approved by Air Force Weather.*

Predicting and Preventing Mishaps

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Have you ever asked yourself how an accident could have been prevented? An overview of the tools investigators use to evaluate an accident can help leaders in pinpointing trouble areas ahead of time. Identifying these trouble areas may assist proactive leaders with preventing the next mishap.

One of the tools investigators use to conduct accident/mishap investigations is the HFACS 7.0 (Human Factors Analysis and Classification System). The HFACS was developed by behavioral scientists to evaluate how performance and human factors contribute to mishaps. Within the HFACS is the Swiss cheese model, which helps illustrate how a mishap occurs through several layers of failures or errors. The HFACS helps investigators get to the “why” of the mishap, not just the “what.” As you glance at this model, please take a second to think about an accident that happened in your motor pool or with a vehicle.

Acts

Most of us remember an act that led to a Soldier’s injury. The act or active failure component starts at the lowest level and involves the Soldier’s decision that led to the mishap. An active failure typically involves something the Soldier did

or did not do. This includes failure to follow procedures, making a wrong decision or violating a regulation. Understanding this stage of the HFACS model can assist leaders with focused training to mitigate these risks.

Preconditions

The preconditions of a mishap often come from environmental factors, physical or mental stress, and personal issues. These can include a variety of factors, including fog, dust, weather, restraint systems, instruments,

workspace, communication equipment, mental awareness, state of mind, effects of substances, loss of consciousness, fatigue, nutrition, body size or physical strength. Recognizing these preconditions ahead of time may make the difference in preventing a mishap in your workplace.

Supervision

The third slice of cheese in the model illustrates the command’s role in the mishap. This typically involves a supervisor’s knowledge of the preconditions, failing to

THERE ARE LAYERS OF FAILURES OR ‘ABSENT DEFENSES’ FROM THE ORGANIZATION DOWN TO THE INDIVIDUAL SOLDIER THAT LINE UP AND ALLOW A MISHAP TO OCCUR.”

HAZARD

Organizational Influences

Supervision

Preconditions

Acts

DEATH

Failed or Absent Defenses

Active Failures

LATENT FAILURES

Mishap-Level

Person-Level

Injury

Damaged or Destroyed Equipment

Damaged or Destroyed Property

Organizational influences

guidance, unclear mission or inadequate organizational structure. Understanding where organizational shortfalls exist enables leaders to address these issues with the command. These shortfalls may merit elevating the decision authority for missions or tasks that carry higher levels of residual risk.

Conclusion

oversight, inadequate standard operating procedures or even high OPTEMPO. Risk mitigation requires thinking about the big picture and taking necessary steps to safeguard our Soldiers.

The methodology of the HFACS not only helps accident investigators get to the root causes of a mishap, it allows leaders to assess their organizations to prevent conditions that cause accidents. Leaders should be keen to these contributing factors and do everything possible to create a safety culture in their organizations. If you spot Soldiers using shortcuts or taking unnecessary risks while performing a task, ask yourself, "How can I identify preconditions, improve supervision and influence the organization to ensure my Soldiers are conducting their day-to-day jobs in the safest possible manner?" ■

out of control

It was the start of another beautiful weekend. My wife and I arose at a leisurely hour and loaded our SUV with all the things we thought we'd need for a weekend at the family farm. At the time, I was stationed in San Antonio, and the farm was located two hours away. We'd been married three years, and our first daughter was 8 months old. The weather that morning wasn't the greatest, being overcast with frequent showers. Still, we loaded our vehicle, fed our daughter and took off.

After an uneventful drive around the city, we merged onto Interstate 10 and continued east. Our daughter had already fallen asleep in her car seat in the back. The rain began coming down harder and my wife and I got into a somewhat heated discussion, which distracted me from my driving. As a result, I lost track of how fast we were going. As the rain worsened, so did our argument and I picked up speed, hitting 74 mph as I topped a rise. My tires suddenly lost traction with the pavement and began riding on a thin layer of water. I was hydroplaning! What happened next probably didn't last more than 20 seconds, but it felt like an eternity.

I had no control over the vehicle as we went down the rise. Regardless what direction I turned the steering wheel, the SUV remained in a slow spin as it went down the interstate. Time seemed to almost freeze and I was acutely aware of my thoughts and actions. I looked over at my wife and yelled, "I have no control!"

The vehicle headed toward the median and spun through the soft grass, sending mud and grass flying

everywhere. I was afraid one of my tires might catch an edge on a firmly embedded rock, stick or something else protruding above ground. That was a particular concern because our SUV's high center of gravity made it prone to rollover accidents. Ahead I could see a 6-foot-wide drainage culvert with a 4-foot drop-off. As we got closer, I was expecting us to hit the drop-off and flip over. Fortunately, the vehicle stopped just short of the culvert.

I looked at my wife, took a deep breath, said a quick prayer of thanks and relaxed my white-knuckle grip on the steering wheel. Even though we'd been out of control and attempting to steer didn't help, I'd still hung on for dear life. I leaned over to hug my wife and we both checked the backseat to see if our daughter was OK. Surprisingly, she was still sleeping soundly. Exiting the vehicle, I did a walk around and saw the only damage was some mud and grass on our SUV. I then locked the hubs and drove back onto the interstate toward our destination.

When we arrived at the farm, my

father-in-law, who was a former Air Force fighter pilot, told me about a hydroplaning accident he had in an F-101 jet fighter. He said he was landing at Ellington Air Force Base, Texas, on a rain-drenched runway. As he touched down, his tires began riding on a thin layer of water, making the aircraft's brakes useless as he tried to decelerate. He was still going at a pretty good clip when his tail hook failed to grab the barrier and he ran off the end of the runway.

Another pilot in my father-in-law's squadron was a NASA test pilot doing research on hydroplaning. My father-in-law learned that the minimum hydroplaning speed equals nine times the square root of your tire inflation pressure in pounds per square inch. For most automobiles, the recommended tire pressure is between 35 and 40 psi. This means when driving on wet roads, your maximum speed should be less than 54 mph. You can calculate this by using 36 psi as your tire pressure, taking its square root, which is 6, and multiplying it by 9 to come up with 54 mph.

To drive safely in wet and rainy conditions, reduce your speed to below 54 mph for your protection as well as others. Remember, it only takes a second before you're no longer in control. ■

WET AND WILD

- Prevent skids by driving slowly and carefully, especially on curves. Use a light touch when steering and braking.

- If you do find yourself in a skid, remain calm, ease your foot off the gas and carefully steer in the direction you want the front of the vehicle to go. You must be prepared to turn the steering wheel repeatedly until your vehicle is traveling in a straight line. For vehicles without anti-lock brakes, avoid using your brakes if possible. If your vehicle has ABS, brake firmly as you steer into the skid.

- Avoid hydroplaning by keeping your tires inflated correctly. Maintain good tire tread. Don't put off replacing worn tires. Slow down when roads are wet and stay away from puddles. Try to drive in the tire

tracks left by the vehicles in front of you.

- If you find yourself hydroplaning, do not brake or turn suddenly as this could throw your vehicle into a skid. Ease your foot off the gas until the vehicle slows and you can feel the road again. If you need to brake and your vehicle doesn't have ABS, do it gently with light pumping actions. If your vehicle has ABS, then brake normally. The vehicle's computer will automatically pump the brakes much more effectively than a person can do.

- A defensive driver adjusts his or her speed to the wet road conditions in time to avoid having to use any of these measures.

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HIT THE BRAKES

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As a medevac pilot serving a tour in Iraq, I found myself flying into, around and through some very tight and sometimes scary situations. During one of my many flights, and what I thought was a fairly routine patient pickup and drop-off into Baghdad's combat support hospital, I had a "there-I-was" moment.

As customary, we must fly any and all hours of the day and night and be prepared for such multi-missions. Departing from our forward operating base at Diwanyah, Iraq, with a routine patient heading to Baghdad CSH, the flight was, for the most part, uneventful. This was a day flight, so we could see the scenery and wave to villagers as we flew by. Making the appropriate ATC calls and flying in the correct corridors had become second nature to us by now. Almost like flying back in the states.

As we approached the CSH, now three to five miles away, I, as lead (always in flights of two), called the other aircraft to communicate our initial speed and altitude reduction. Those of you who are pilots will understand that at that time I reduced the collective. To stabilize that initial reduction to the speed and altitude that was desired, I added a little power (collective) back in. Here is where things began to deteriorate.

I was unable to pull in collective. Not good! I asked my co-pilot, who was navigating and talking on the

radios, if he had put the friction on. This stiffens the collective so while flying the vibrations don't slowly make the collective lower. He said he hadn't, but proceeded to loosen it anyway, just in case. I again had collective control. All was good.

About one-half mile from the CSH, I called the other aircraft to announce our second and final speed and altitude reduction prior to landing. Again I lowered the collective to reduce speed and altitude. As before, when the aircraft slowed to the speed and altitude that I desired, I began to add the collective back. Once again, though, it would not move! I jiggled and pulled and still nothing.



At this point in the flight, we were committed, less than 100 feet above the ground, which was coming fast! If you've seen the CSH pad in Baghdad, you'd know that it is only large enough for four Black Hawks, two rows of two. Oh, did I mention the pad was surrounded by T-walls? Yes, T-Walls.

My aircraft is falling from the sky with no power control and I have no room to roll, which is needed and trained in many Black Hawk emergencies. I notified my crew that we had a problem and they should lock all of their shoulder harnesses and to brace for impact. I executed a decel, pulling the nose of the aircraft up using our speed

to stop our descent and try to slow down more, only using aircraft inertia. Miraculously, we hit the ground with little downward force, but we were still moving forward. If you remember, that wasn't a good thing because of the T-walls.

I was practically standing on the brakes when we came to a stop just feet from the T-wall. I immediately looked to my co-pilot's collective and saw that his night vision goggles had fallen from where he had stowed them and become

lodged in the collective. We had an intense discussion as to how we were going to store things a little more appropriately next time.

One of the first and most stressed things I was taught from day one for training at Fort Rucker was "attention to detail." That lack of attention to detail could have created a major catastrophe that day. Thanks to the great instructors at "Mother Rucker," I can tell my story. ■

It was the spring of 1990, and I was stationed at beautiful Camp Pendleton, California. I had just recently married my high school sweetheart, was two months from pinning on the rank of corporal and was gearing up to go on my first deployment. I thought my life could not get better until I received a phone call from my older brother asking if I was interested in purchasing one of his motorcycles.

Being that I was stationed in sunny California, the thought of riding a bike down the Pacific Coast Highway was a dream I now had a chance to make come true. My brother had a couple of friends interested in the bike, but he thought he would keep it in the family and give me the first shot at buying it. My wife, on the other hand, was not too excited about the idea of me riding a street

bike. She knew my only previous experience was riding dirt bikes in Arizona, and that had been years ago.

Well, I jumped at the offer and was on the road to Phoenix the next weekend to pick up the bike, a fully loaded 1982 Honda Gold Wing. My pride in owning a tour bike was showing as I told my wife all of the places we were going to explore while enjoying the freedom of riding a motorcycle.

The week after I bought the bike, my staff sergeant had me enrolled in the Motorcycle Safety Foundation's Basic RiderCourse. I was sure it would be a piece of cake. Little did I know it would become quite the challenge to get such a

large and heavy bike around that short, tight course. I could have easily breezed through it on the dirt bikes I used to ride, but the Honda was much more difficult to maneuver. I instantly realized it would be a while before I could even think about taking my wife for a Sunday ride.

After I completed the course, I became a licensed motorcycle rider and was eager to get out on the road with my buddies and their bikes. They knew I was a new rider and actually took it slow for the first couple of rides. However, it soon became a challenge to keep up with them. They all had sport bikes, which were much different from the large, heavy touring bike I was riding. As I slowly

Heading for the Edge

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gained more and more confidence riding, I began to push my limits.

Eventually, I had the confidence to take my wife on a ride with my friends to Julian, California. Julian is a small town known for its apple pies and friendly atmosphere, and for months my wife had wanted to visit. I figured what better way to see it than on a bike. So we met my friends, who were eagerly waiting on their sport bikes, and began riding through some of the most beautiful countryside in southern California. Every so often my friends would open up their bikes on a long straightaway when there was no traffic and sometimes I would join them. My wife and I were both young and enjoying the adrenaline rush of the speed and freedom of being on the bike.

When we got closer to Julian, the roads became narrower and the turns tighter. As they rode through a tight 10-mph turn, I was amazed how

smoothly their bikes maneuvered. However, it didn't go quite so well for me. I hit the turn going 20 mph and couldn't lean the bike far enough to avoid drifting over the double yellow line. We crossed the oncoming lane and stopped on the far shoulder, looking down from a 100-foot cliff.

than mine. If I could turn back the clock, I'd have purchased a smaller bike to learn on while riding on the streets and highways and resisted the urge to push the limits.

My wife and I were lucky not to become part of the landscape that day. However, luck doesn't cut

"MY WIFE AND I WERE LUCKY NOT TO BECOME PART OF THE LANDSCAPE THAT DAY."

We were fortunate there was no oncoming traffic. I was also glad to be wearing a helmet, as it protected me from my wife, who was a little upset and slapping me on the back of my head. The ride home was uneventful, and the sale of the bike two weeks later was a blessing.

As I reflect on the situation, I can't believe I let the excitement of riding a motorcycle override my using risk management to recognize I was riding way beyond my experience level. My friends were much more experienced and riding bikes that were much smaller and lighter

it — not when your life and the life of someone you love are on the line. Don't buy more bike than you can handle, thinking you'll grow into it. You may not live that long. And give yourself a break; recognize even Superman had to learn to walk before he could fly. Ride within your skills and, if you're a bit sharper than the average tack, leave yourself a little margin for safety. After all, when you're headed for the edge of a 100-foot cliff, where would you rather stop — one foot before or one foot beyond? ■

DON'T A

CHIEF WARRANT OFFICER 4 KEVIN RIESE

Looking up the word **assume** in the dictionary, I found the definition to be “to take for granted.” In the aviation business, there is never a time we should take something for granted. The story I am about to tell could have potentially ended in significant damage to an airframe, or worse, as injury or death of a fellow aviator.

The mission was to continue training a new instructor pilot. The weather was perfect, and we were sharing the traffic pattern with another aircraft doing readiness level progression, both doing emergency procedure and touch-and-go training. Things were working well. Sequencing and timing was coordinated via internal frequency so each aircraft could complete the required maneuvers and not be rushed by the other aircraft.

After one particular landing, I decided to exit the runway and taxi back to talk over the previous maneuver and give the new instructor pilot trainee a break. So we taxied back to the runway hold-short line, set the brakes and talked about the maneuvers. As we watched the other airplane do a pattern, we waited to sequence back into the flow of the traffic pattern. We saw the other aircraft turn base, then final, and we both commented that their landing gear was not down. Knowing the instructor pilot in the other aircraft was an outstanding aviator and incredible instructor, I assumed

he was aware of the situation.

I believed the instructor was using this event as a training point, and we both continued to watch the approach. As they were on final to the runway, I commented they are getting a little too low for comfort and should be receiving a gear warning in the cockpit, but I did not want to get into the other pilot's training.

As they approached the threshold, I'd had enough and wanted to ensure they were aware of the situation. I transmitted over the radio to check gear and go-around. As I was keying the mike talking, the airplane began the go-around and all seemed well. I was curious if they were aware of the gear not being down prior to my call, or if I indeed helped them avert disaster.

After completing the training flight and debrief, I questioned the other crew as to what was happening during the situation. As expected, the pilot in progression was behind the aircraft and unaware due to task overload. The instructor pilot assured me he was aware of the situation

and wanted to use the event as a training point. The one thing he conveyed to me was that due to an inoperative navigation component, they did not receive GPWS warning of, “Too low, gear.”

So what if I did not say anything and the other crew had an accident while I watched. It's such a simple thing to do; it's our obligation as leaders and officers. Assuming because the other instructor pilot was good and had it under control, or aircraft systems would alert him of the problem is wrong. I hesitated saying anything because I was confident in the other IP's ability. That could have been disastrous.

How many accidents could we avoid if someone said something when others deviated from the standard? I may be stating the obvious, but the importance cannot be overstated. Let's not assume anything. Always speak up if you see something wrong or not to standard. ■

ASSUME



a Man Without a Plan

It had been a difficult and challenging few weeks in flight training at Fort Rucker, Alabama. I was a very green warrant officer not long out of candidate school and only 24 years old. I thought I had the world by the tail and my future looked so bright I had to wear shades. Given the hard work we had been putting in the past few days, a number of us decided to relieve some stress at a local Daleville watering hole. We arrived early in the evening and commenced to partying like the young guns we were.

NAME WITHHELD BY REQUEST

The drinks were flowing and we were having fun. It was starting to be a great evening. But we made a tactical error in not identifying a designated driver or planning for a cab. Despite my increasingly inebriated state, I recognized that fact and decided to lay off drinking the rest of the evening so I could drive us home. I switched to drinking water, hoping that would enable me to safely operate a car in a couple of hours.

The night wound down and we closed the bar. I felt fine to drive (or so I thought) and my cohort was in no condition to get behind the wheel.

I planned to drive us back to the bachelor officers' quarters on post. Shortly after getting into the car, my buddy passed out in the passenger's seat. I drove to a rarely used back gate near the bar that would provide us the shortest route to the BOQ, minimizing our time on the road.

The BOQ was in view and it would only take a minute or two to drop off my buddy and then move on to my room. It was then I spotted a blue lights flashing in my rearview mirror. A sight everyone dreads seeing was at my six. I couldn't believe it was happening to me.



I pulled over to the side of the road and waited for the military police to approach. Thoughts of the career suicide I was about to commit were running through my head. If I was lucky, I could get my enlisted job back on M3 Bradleys. Worst case, I could be back at Pizza Hut, tossing pies.

I rolled down the window as the MP came up to the side of my car. The first thing he noticed was my passed-out friend in the passenger's seat.

"Do you know why I pulled you over," he asked.

"Uh, I have no idea," I replied.

"You didn't come to a full stop at the stop sign back there when you came on post," he said. "What's wrong with him?"

I told him we had been at a bar and he'd had too much to drink and passed out. As I handed my license and insurance to the MP, he asked me if I had been drinking.

"Of course not," I lied.

He proceeded to return to his vehicle as another MP car parked in front of mine. After a short delay, both MPs approached my vehicle.

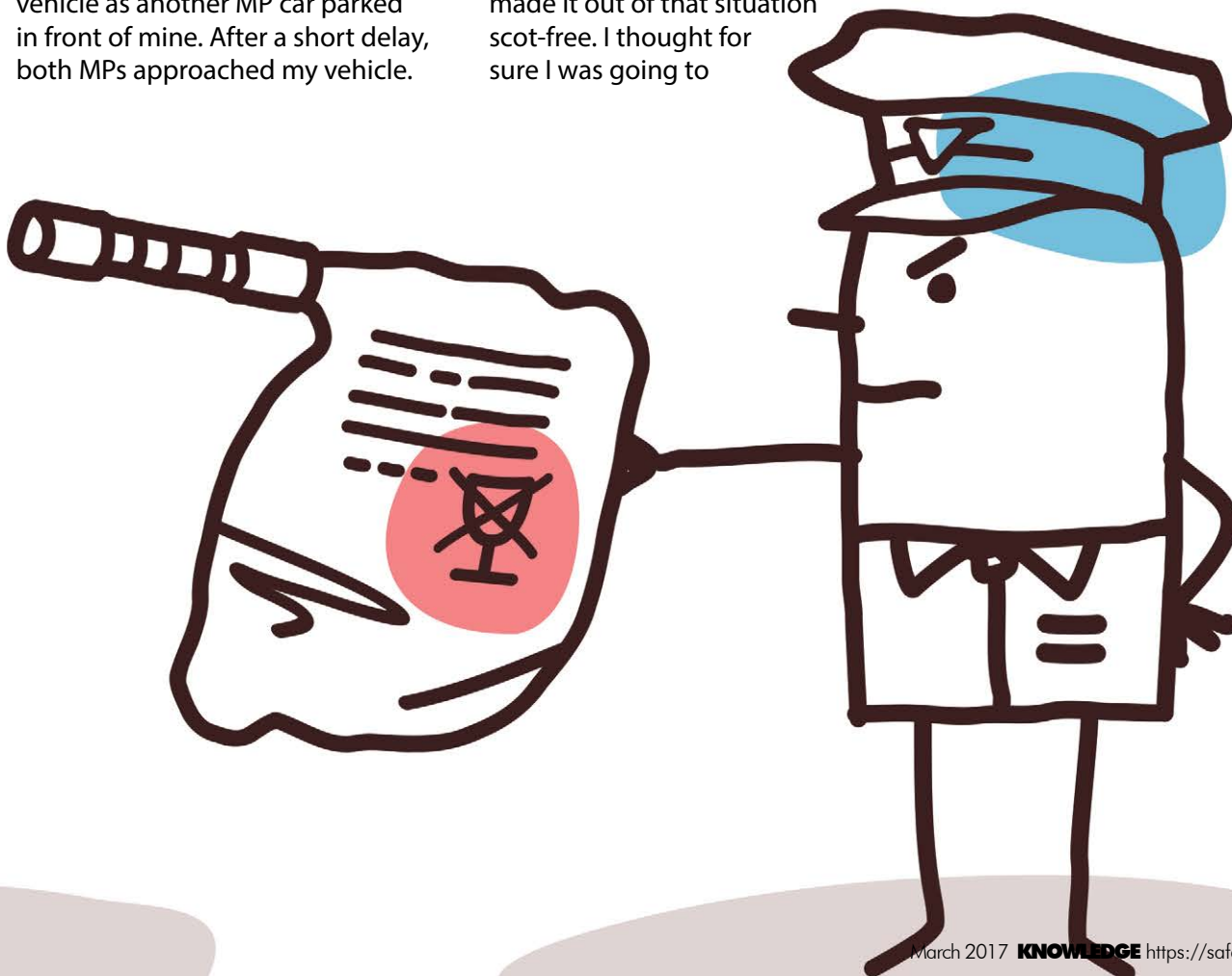
They clearly doubted my story as they asked me to step out of the vehicle and submit to a sobriety test. There I was on the side of road, performing the tests to the best of my ability. I thought I was doing well and home free until they brought out the breathalyzer. I remember thinking, "Why didn't they just bring that out first and get it over with," as I blew into it. I thought for sure I was dead meat. Those things don't lie, right?

Well, I must have passed because they released me to drive home. I never did find out what I blew, but I didn't care at that point. I just wanted to get back to the BOQ and put this night behind me. The MPs even congratulated me on being such a responsible officer and driving my passed-out friend back from the bar. They took my name and unit and promised to let my chain of command know what a great job I did. If they only knew!

To this day, I still can't believe I made it out of that situation scot-free. I thought for sure I was going to

be talking to the boss on Monday morning and getting my discharge papers in order. Despite all of the safety briefings, classes and options available to me, I still took a stupid chance and drove after drinking. And this was after a classmate got drunk, fell asleep at the wheel, crossed a median and struck a car head-on, killing two people. The same thing could have easily happened to me.

I vowed never to let something like this happen to me again — a promise I have kept to this day. I was fortunate not to have ruined my Army career or, worse, had an accident that injured or killed others. As leaders, we are expected to set the example. We have to stay engaged and disciplined and hold ourselves accountable to the same standard we expect from our Soldiers. I learned from my experience and have chosen to set the kind of example my Soldiers can follow. ■



There When You



As you pry off the battery cap, you realize you're not wearing eye protection. Sure, you've heard about the dangers of battery acid splashing into the eyes, but that always happens to the other guy. Before you have time to blink or turn your head, it's now happened to you. Are you prepared for this type of emergency?

Emergency eyewash stations are designed to irrigate and flush the eyes in case of contact with hazardous chemicals. A chemical splash to the eyes can be especially dangerous; in fact, some chemicals can penetrate the eye within seconds. It is extremely important to immediately flush out the chemical before it causes severe damage or blindness.

Do you need an eyewash station in your workplace?

The Occupational Safety and Health Administration has a general requirement that calls for employers to provide an eyewash station as part of OSHA's medical and first aid standard:

Where eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use (29 CFR 1910.151(c)).

So how do you know if you need an eyewash station? You will have to review the Material Safety Data Sheets for all the chemicals you have in your workplace and determine if they are corrosive. Corrosive materials include acids with a pH less than 2.5 and alkalis with a pH greater than 11.0.

Eyewash station requirements

Since most eyewash stations often

go unused for months, sometimes even years, it's extremely important they are maintained in proper working condition in case of an emergency. If not, the consequences could cost you your eyesight.

OSHA only offers the requirement to provide an emergency eyewash; however, it does not provide specific instruction on the installation, operation and maintenance of eyewash stations. Many organizations turn to American National Standards Institute Z358.1, Emergency Eyewash and Shower Equipment, which provides detailed information regarding the installation and operation of these stations. Technical Bulletin 385-4, Safety Requirements for Maintenance of Electrical and Electronic Equipment, requires eyewash stations meet these requirements, and some of these guidelines are in Department of the Army Pamphlet 40-506, The Army Vision Conservation and Readiness Program, Appendix G.

Here are some basic emergency eyewash guidelines you should be aware of:

FYI

Contact your local safety office or industrial hygienist to assist you with identifying eye hazards, surveying your worksite and selecting proper eye protection. For more information, check out the following resources:

- U.S. Army Public Health Center's Vision Conservation and Readiness page: <https://phc.amedd.army.mil/topics/workplacehealth/vcr/Pages/default.aspx>
- DA Pam 40-506, The Army Vision Conservation

and Readiness Program

- Authorized Protective Eyewear List: <http://www.peosoldier.army.mil/equipment/eyewear/>
- OSHA's Eye and Face Protection website www.osha.gov/SLTC/eyefaceprotection/
- OSHA's Eye and Face Protection eTool www.osha.gov/SLTC/etools/eyeandface/
- National Society to Prevent Blindness www.preventblindness.org

Need It

COMPILED BY THE KNOWLEDGE STAFF

DID YOU KNOW?

To raise awareness about stopping workplace eye injuries, Prevent Blindness America has designated the month of March as Workplace Eye Health and Safety Month.



•**Close enough to the hazard.** In most cases, locate eyewash stations within 10 seconds of the hazard; however, for strong acids/caustics, the eyewash station may need to be within a few feet (such as battery-charging stations).

•**Unobstructed access.** Ensure access is direct and nothing in the area will prevent easy access when vision is reduced by something in the eyes. For example, a door and mop buckets are considered obstructions. Eyewash stations should also be located on the same level as the hazard (i.e., no stairs) and in well-marked areas.

•**Quick activation.** The valve must activate within one second and remain on without further use of the hands.

•**Clean.** Use dust covers that easily pop off when an

eyewash station is activated to protect the heads from airborne contaminants.

•**Test frequently.** Inspect and activate stations weekly to verify proper operations.

Additional information on the installation, such as flow rate, and other requirements can be found in ANSI 358.1. Remember to always follow the manufacturer's instructions.

All employees who are exposed to chemicals in the workplace should be trained on the location of emergency eyewash stations. They must also know how to activate them and how to flush the eyes with water for a minimum of 15 minutes before and, if possible, while transporting the injured individual to an optometrist or ophthalmologist. It could save a co-worker's eyesight. ■



DID YOU KNOW?

According to the American National Standards Institute, workplace eye injuries are a leading cause of eye trauma, vision loss and blindness. An estimated 2,000 eye injuries occur in the workplace every day, but according to the American Academy of Ophthalmology, nearly 90 percent of all eye injuries could've been prevented by using the right kind of protective eyewear.



**EMERGENCY
EYE-WASH STATION**



IN THE BLINK OF AN EYE

Every day an estimated 2,000 U.S. workers suffer job-related eye injuries that require medical treatment, according to the Centers for Disease Control and Prevention. In the blink of an eye, you, too, can suffer and injury if you're not wearing proper protective equipment.

Eye protection is a crucial part of any workplace safety program, as workers are exposed to a variety of working conditions. According to Occupational Safety and Health Administration, one of the primary causes of eye injuries is the failure to wear or use of the

proper eye protection for the job.

Some people just don't like to wear safety glasses and goggles. One complaint is goggles tend to fog up. Fogging happens when sweat vaporizes and coats the inside of the lens. If you have this problem with goggles and glasses, wear a handkerchief or sweatband around your forehead to keep perspiration out.

Another complaint is eye protection devices are uncomfortable, but usually this is because they don't fit properly. Make sure you have the device properly adjusted for the correct fit

or simply get another that fits better. You can see a lot better out of a properly fitted eye protection device than you can out of a glass eye.

Be smart and use eye protection when on the job, especially in high-risk areas such as the rifle range, boiler plant, machine shop and motor pool or when performing high-risk jobs such as welding, carpentry, grinding, mechanic work and machining metal. Like all safety devices, eye protection is there for you and your eyes. Wear it. What do you have to lose ... other than your eyesight? ■

IT AIN'T JUST FOR LOOKS

JERRY HOLLENBACK
Dugway Proving Grounds
Dugway, Utah



VS

It was a warm July afternoon and I was getting ready to go across town for a get-together with a group of other riders. I had a helmet, but it was not required in the state where I lived.

The year was 1978, and I had just gotten out of the military after doing one tour. Hairstyles in the 70s were, for the most part long, and I felt the need to grow mine since I had to keep it so short in the military. At the last minute, I decided to wear my full-face helmet since I knew it would keep the bugs out of my long locks. Man, I'm glad I did.

After about 15 minutes of riding, I hit a state road where the speed limit increased to 55 mph. I saw a white pickup coming from the opposite direction and noticed a couple of guys in the pickup's bed. There was no other traffic, and I remember squinting because I was riding into the sun.

All of a sudden, I felt like someone had hit my head with a baseball bat. The impact almost knocked me from the bike. The helmet's face

shield was covered with a red fluid, obscuring my vision and confusing me even further. Fortunately, I was able to direct my motorcycle to the shoulder and stop. Shaking, I removed the helmet expecting to see bird parts. I was certain that the red fluid was blood, and all I kept thinking was that a big bird had impacted me at 55 mph. Imagine my disbelief when I removed my helmet and discovered it covered with pomegranate juice and seeds.

It was at that instant I realized the guys in the back of the pickup must have heaved a pomegranate at me. Without thinking, I mounted my motorcycle and sped after them. By now, they were already a couple of miles in front of me, but I knew I could catch them. After chasing the pickup for about 5 minutes, I had closed the gap to about a half mile. It

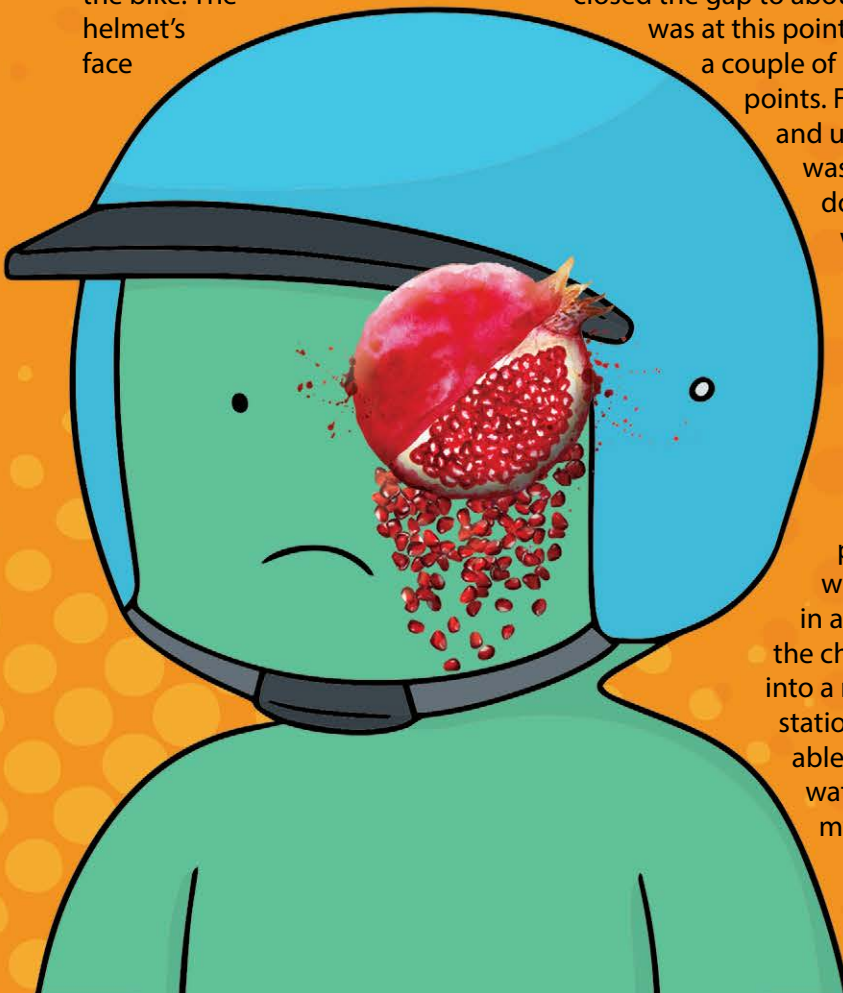
was at this point that I realized a couple of important points. First, I was alive and unhurt, but I was speeding down the road with a blurred visor, chasing a pickup in a fit of rage. Second, even if I had managed to get the pickup to pull over, then what? Reality set in and I gave up the chase. I pulled into a nearby gas station and was able to get some water to clean my face shield.

As I took a couple of deep breaths, I gave thanks for the fact that I was unhurt and pondered the events.

I had been going at least 55 mph and the pickup was probably going at least as fast as it came at me. A pomegranate — a fruit as hard as a baseball — was chucked at my face with the velocity of a fast pitch. What if I had not worn my helmet? With my helmet, I was barely able to maintain control. A sobering feeling swept over me. Next, I thought about the altercation I almost got in. Had I caught up with the truck, what if he'd decided to use his vehicle against mine? A truck against a motorcycle is an unfair fight. Finally, what if we both stopped in a safe location? Then what? There were at least three of them against me.

This experience taught me many great life lessons. First, my helmet surely saved my life. Second, I can't allow my emotions to get the better of me. Whether riding on my bike or in my car, I can't let other drivers provoke me to react with rage. Finally, I vowed to pay more attention to my surroundings. Whether it's a short drive across town or a cross-country trip, you can't allow yourself to become complacent. Make sure your bike is mechanically ready for the ride and that you are mentally and physically prepared.

I'm in my 50's now and my hair is much shorter. I still ride motorcycles and I always wear my helmet — except now I wear it for protection instead of vanity. Every time I see riders not wearing helmets, I wonder what it will take to get them to wear one. I hope they'll change their ways before someone, whether by accident or intentionally, makes them a fatality statistic. ■



THE IMPORTANCE OF FIRING-LINE SAFETIES

DAVID ROCKWELL
Fort Drum, New York

I once spent 18 months supervising small-arms ranges with about 20 other Army retirees. Our experience indicated that range safety is directly related to the quality of unit firing-line safeties.

We observed active-duty, Reserve and National Guard units. One commonality among them was that they often paid little attention to the qualifications of their firing-line safeties. Instead, the primary consideration was, "Who is available right now?" Most

unit leadership understood firing-line safeties must be a specialist or higher rank; however, few leaders took time to brief them on their specific firing-line responsibilities. Seldom was anyone designated to supervise firing-line safeties, although range safety officers and

officers in charge are designated by Army Regulation 385-63.

This problem was illustrated on an M16 range. During a 10-day span, three Soldiers left the firing line with a chambered round in their rifles. These Soldiers walked across the range complex to a classroom, totally

unaware of the chambered rounds. Fortunately, an alert unit leader or range safety officer spotted the problem and immediately cleared the weapon in each instance. Three serious accidents with tragic consequences could have occurred had the chambered rounds not been discovered.

All unit leaders, range officers in charge and range safety officers must be aware of this systemic problem. It is their responsibility to brief firing-line safeties before they assume their duties and supervise them during the range exercise. Also, range standing operating procedures should include a specific briefing for firing-line safeties. The unit officers in charge or noncommissioned officers in charge should give this brief and include the following topics:

- Firing-line safeties must know the exact firing positions for which they are responsible. A good ratio, or span of control, is one

safety per two or three shooters.

- Firing-line safeties must be aware of any inexperienced shooters on the line. Inexperienced shooters raise the probability of an accident and must be supervised accordingly.

- All means of communication — paddles, arm signals and verbal commands — must be understood clearly. Handheld radios also may be necessary for communication.

- All firing-line safeties must loudly and clearly repeat the tower's firing commands. This process helps each shooter keep their focus downrange. Firing-line safeties must ensure each shooter stays within the firing commands and that their weapon is pointed up and downrange.

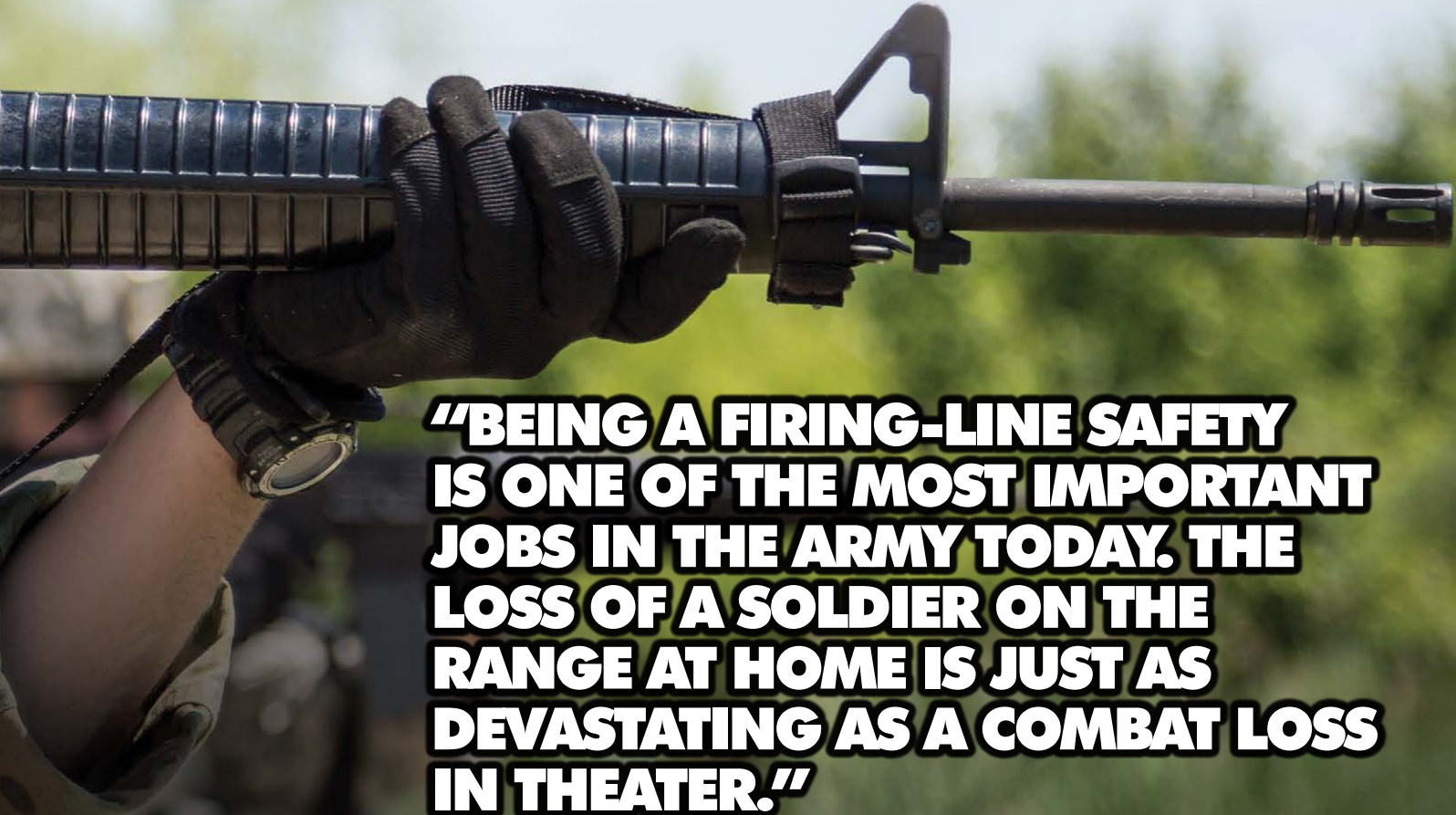
- Firing-line safeties must keep their focus on the firing line and intervene immediately when a shooter has a problem. During M16 qualification, Soldiers must keep their weapons operational;

however, an inexperienced shooter attempting to clear a weapon represents an immediate hazard.

- Firing-line safeties must rod each weapon as the shooter enters and exits the firing line. According to AR 385-63, the range safety officer is responsible for ensuring all weapons are clear before and after the range exercise.

- Firing-line safeties should be qualified on the weapon(s) they are supervising.

Being a firing-line safety is one of the most important jobs in the Army today. The loss of a Soldier on the range at home is just as devastating as a combat loss in theater. Show these Soldiers what right looks like and give them the skills to make it home from the fight. ■



"BEING A FIRING-LINE SAFETY IS ONE OF THE MOST IMPORTANT JOBS IN THE ARMY TODAY. THE LOSS OF A SOLDIER ON THE RANGE AT HOME IS JUST AS DEVASTATING AS A COMBAT LOSS IN THEATER."



ONE DECISION CAN C

CHIEF WARRANT OFFICER 5 RANDY MILLER
1st Battalion, 351st Training Support Battalion
Fort Stewart, Georgia

As night approached, the crews were getting ready for their night vision goggle training mission. The task for this night was to conduct readiness level progression for hoist operations. As the crew adjusted their NVGs and cranked the UH-60, they had no idea a routine litter hoist training mission would result in something much more.

Performing RL progression tasks are standard procedures; yet crews often approach these tasks with anticipation and excitement, especially the new guys. On this night, one of our junior pilots was completing his aerial reconnaissance low altitude progression tasks for hoist operations. The crew mix was right — an experienced pilot in command and a senior crew chief, both having conducted this mission on several occasions, were paired with an inexperienced PI. The flight plan was routine and the PI briefed the mission to the PC and crew chief. Neither crewmember had any serious questions about the mission. At the successful completion of this training, the PI was anticipating a progression to RL 1.

This training mission was a combination RL progression flight and training for ground crews to learn how to hook up a litter for aerial extraction. The PI brought the aircraft to a 50-foot hover above the ground level and the crew chief deployed the hoist, lowering a litter to the trainees on the ground. Some of them had eagerly discussed how awesome it would be to be winched up in the litter to the aircraft hovering overhead. This was the eventual plan; but, first, a few practice winch down-and-up exercises were required to make sure everything worked as planned.

gloved hand to control the back and forth movement; however, his attempt proved useless and the oscillations continued. The crew chief then used both hands to try and stop the rapid oscillations, but to no avail.

The crew chief's leg dangled outside the aircraft's door as he used his whole body in an attempt to stop the swinging litter. Suddenly, his leg became wedged between the hoist cable and cabin floor. The hoist continued to apply pressure to the cable until, without warning, the litter swung out, struck something on the aircraft and crashed to the ground with about 3 feet of steel cable hanging from the attachment point.

Fortunately, no one was injured, nor was any equipment damaged. The aircraft landed safely and the crew chief was treated for minor bruising to his leg. The UH-60 sustained minor cosmetic damage from the cable scraping the airframe.

As the aircraft crew joined the trainees on the ground, everyone silently said a prayer of thanks that no one was in the litter. Maintenance personnel inspected the aircraft immediately to determine why the cable suddenly snapped. Upon closer inspection, they found the cable had not snapped; rather, a protruding bolt from the aircraft wheel had cut it. This caused the cable to fail and the litter to fall 70 feet.

litter oscillations. This failure, along with the failure to crew coordinate with the pilots, compounded the problems with handling the load.

Maintenance personnel tightened the protruding bolt that caused the cable failure. The battalion commander directed the company to inspect all aircraft for other bolts that might have backed out of their required positions, as well as determine if maintenance was performing by the book. Fortunately, no other aircraft had bolts protruding from them.

The next day, the battalion commander ordered a safety stand down to discuss lessons learned and to remind all aviation crewmembers that flying helicopters is dangerous business. He stressed that flight crews should plan their missions and preflight their aircraft with meticulous detail. Risk assessments are not just a check-the-box exercise, they take aviators one step closer to accident prevention.

Thankfully, no one was injured in this incident. Nevertheless, the ground personnel recognized how close they came to death. Just thinking about joy riding in the litter on the hoist up to the aircraft wasn't using good common sense. This incident was a good example of the dangerous jobs we perform every day. It is also a reminder how the addition of variables can

CHANGE EVERYTHING

With the cable lowered to the ground and the simulated initial hookup, the Stokes litter basket began its ascent to the aircraft. During the ascent, the litter began to swing back and forth, with each oscillation more pronounced the closer it got to the aircraft. Ultimately, it rapidly swung out of control. The crew chief reached out with his

Lessons learned

The battalion safety officer immediately conducted an accident investigation and found additional failures that contributed to the accident. The crew chief did not place his intercom switch to "hot mike" to allow crew coordination and he failed to lower the hoist cable without the litter attached to reduce

affect mission risk. Use common sense when planning your next mission. One irrational decision can change everything. ■



If it happens ...



REPORT IT

ARMY ACCIDENT REPORTING SYSTEM

<https://safety.army.mil>